

**CLAIM AMENDMENTS:**

1. (Currently Amended) An electrical current collector system comprising:  
an electrically conductive slip ring mounted to a rotatable shaft;  
a fixed conducting ring assembly forming a partially enclosed AC high voltage electrical current conductive ring channel in which slip ring contacting members are mounted;  
a compartment at ground potential for at least partially enclosing the slip ring and the fixed conducting ring assembly;  
a source which directs a fluid into the conductive ring channel to perform at least one of cooling and cleaning of ~~[[and]]~~ the slip ring contacting members;  
and,  
a hollow conically shaped insulator having a frustum with a narrower cross-sectional opening connected to the conductive ring channel and a larger diameter cross-sectional portion passing through and connected to the compartment for exhausting the fluid from the current conductive ring channel.
2. (Currently Amended) The ~~apparatus-system~~ of claim 1 wherein the slip ring and fixed conducting ring assembly are mounted to have a gap formed therebetween and wherein the source directs the fluid into the compartment so that the fluid travels through the gap and into the conductive ring channel to additionally perform at least one of cooling and cleaning of an interface of the slip ring and the slip ring contacting member.
3. (Currently Amended) The ~~apparatus-system~~ of claim 1 wherein the insulator continues to extend in a widening conical shape to an outlet port located beyond the compartment.
4. (Currently Amended) The ~~apparatus-system~~ of claim 3 wherein the insulator has a diameter that increases beyond the compartment.
5. (Currently Amended) The ~~apparatus-system~~ of claim 4 wherein the insulator has an inside wall portion that has a convex curvature beyond the compartment.

6. (Currently Amended) The ~~apparatus~~-system of claim 3 further including a collection chamber mounted to the compartment ~~outer wall~~ and surrounding a portion of the insulator that extends beyond the compartment, and the collection chamber having a filter spaced from and across the outlet port of the insulator for filtering particles from the fluid as the fluid passes through the filter.

7. (Currently Amended) The ~~apparatus~~-system of claim 1 wherein the insulator is slidably connected to the conductive ring channel.

8. (Currently Amended) The ~~apparatus~~-system of claim 1, wherein the slip ring contacting members are brushes.

9. (Currently Amended) The ~~apparatus~~-system of claim 2, further comprising a slip ring support assembly comprising plural post insulators spaced radially about a ~~the~~ rotatable shaft for attaching the conductive slip ring to the rotatable shaft, and wherein the source directs the fluid over at least some of the post insulators for cleaning of the post insulators prior to directing the fluid through the gap.

10. (Currently Amended) The ~~apparatus~~-system of claim 1, wherein the source of the fluid is a fan.

11. (Currently Amended) The ~~apparatus~~-system of claim 1, wherein the conductive ring channel directs the fluid in at least a partially semicircular path to the hollow conically shaped insulator.

12. (Currently Amended) The ~~apparatus~~-system of claim 1, wherein the fixed conducting ring assembly comprises a first conducting plate and a second conducting plate positioned parallel to one another to form a conductive ring channel therebetween, and wherein the slip ring contacting members are mounted in the conductive ring channel.

13. (Currently Amended) The ~~apparatus~~-system of claim 12, wherein at least some of the slip ring contacting members are mounted on the first conducting plate and at least others of the slip ring contacting members are mounted on the second conducting plate.

14. (Currently Amended) The ~~apparatus-system~~ of claim 12, wherein the slip ring contacting members are mounted in pairs in the fixed conducting ring assembly, one slip ring contacting member of each pair being mounted on the first conducting plate and another slip ring contacting member of each pair being mounted on the second conducting plate.

15. (Original) A rotating transformer system comprising:

- a rotor assembly having rotor windings which rotates about a rotatable shaft;
- a stator having stator windings;
- a motor for rotating the rotor assembly;
- a high voltage current collector system through which current is applied to the rotor assembly, and wherein the high voltage current collector system comprises:
  - an electrically conductive slip ring mounted to a rotatable shaft;
  - a fixed conducting ring assembly forming a partially enclosed current conductive ring channel in which slip ring contacting members are mounted;
  - a compartment at ground potential for at least partially enclosing the slip ring and the fixed conducting ring assembly;
  - a source which directs a into the conductive ring channel to perform at least one of cooling and cleaning of an interface of the slip ring and the slip ring contacting members; and,
  - a hollow conically shaped insulator having a frustum with a narrower cross-sectional opening connected to the conductive ring channel and a larger diameter cross-sectional portion passing through and connected to the compartment for exhausting the fluid from the current conductive ring channel.

16. (Currently Amended) The ~~apparatus-system~~ of claim 15 wherein the slip ring and fixed conducting ring assembly are mounted to have a gap formed therebetween and wherein the source directs the fluid into the compartment so that the fluid travels through the gap and into the conductive

ring channel to additionally perform at least one of cooling and cleaning of ~~the an~~ interface of the slip ring and slip ring contacting members.

17. (Currently Amended) The ~~apparatus-system~~ of claim 15 wherein the insulator continues to extend in a widening conical shape to an outlet port located beyond the compartment.

18. (Currently Amended) The ~~apparatus-system~~ of claim 17 wherein the insulator has a diameter that increases beyond the compartment.

19. (Currently Amended) The ~~apparatus-system~~ of claim 18 wherein the insulator has an inside wall portion that has a convex curvature beyond the compartment.

20. (Currently Amended) The ~~apparatus-system~~ of claim 17 further including a collection chamber mounted to the compartment ~~outer wall and~~ surrounding a portion of the insulator that extends beyond the compartment, and the collection chamber having a filter spaced from and across the outlet port of the insulator for filtering particles from the fluid as the fluid passes through the filter.

21. (Currently Amended) The ~~apparatus-system~~ of claim 15 wherein the insulator is slidably connected to the conductive ring channel.

22. (Currently Amended) The ~~apparatus-system~~ of claim 16, wherein the gap is an annular gap.

23. (Currently Amended) The ~~apparatus-system~~ of claim 16, wherein the slip ring contacting members are brushes.

24. (Currently Amended) The ~~apparatus-system~~ of claim 16, further comprising a slip ring support assembly comprising plural post insulators spaced radially about the rotatable shaft for attaching the conductive slip ring to the rotatable shaft, and wherein the source directs the fluid over at least some of the post insulators for cleaning of the post insulators prior to directing the fluid through the gap.

25. (Currently Amended) The ~~apparatus-system~~ of claim 15, wherein the source of the fluid is a fan.

26. (Currently Amended) The ~~apparatus-system~~ of claim 25, wherein the conductive ring channel directs the fluid in at least a partially semicircular path to the hollow conically shaped insulator.

27. (Currently Amended) The ~~apparatus-system~~ of claim 15 wherein the fixed conducting ring assembly comprises a first conducting plate and a second conducting plate positioned parallel to one another to form a conductive ring channel therebetween, and wherein the slip ring contacting members are mounted in the conductive ring channel.

28. (Currently Amended) The ~~apparatus-system~~ of claim 27, wherein at least some of the slip ring contacting members are mounted on the first conducting plate and at least others of the slip ring contacting members are mounted on the second conducting plate.

29. (Currently Amended) The ~~apparatus-system~~ of claim 27, wherein the slip ring contacting members are mounted in pairs in the fixed conducting ring assembly, one slip ring contacting member of each pair being mounted on the first conducting plate and another slip ring contacting member of each pair being mounted on the second conducting plate.

### **AMENDMENTS TO THE DRAWINGS**

Please find attached hereto replacement a Replacement Sheet for each of Figures 1 and 3 of the drawings.

In the replacement sheets submitted herewith Figure 1 has been amended to insert reference numbers 21 and 25 and the associated lead lines to identify in the drawings the location of rotor winding 21 and stator winding 25.

Also, Figure 3 has been amended to insert reference number 465 and associated lead line for the larger diameter cross-sectional portion. Figure 3 has been further amended to place an arrow head on the end of the lead line for number 414.